| EVS Instant Tapeless Technology | **XTAccess** |
|---|---|
| Auteurs: Serge Comes  Olivier Fettweis | **Release Note v1.14** |
| July 13, 2010 | Version 1.1 |

# 1 TABLE OF CONTENT

## 2   LIST OF DOCUMENTS

- o **XTAccess_ReleaseNote_v1.14.pdf** : Release Note of XTAccess v1.14

- o **XTAccess_userman_1.14_ENG_100708_web.pdf** : XTAccess User's Manual

- o **XTAccess_installman_1.14_ENG_100708_web.pdf** : XTAccess Installation Manual

- o **Integration_Avid_WebService_V3.0_100708.pdf** : EVS Integration with Avid Interplay WebService API document

- o **XTAccess_Codecs_v1.14.pdf** :List of codecs & wrappers compatible with XTAccess for wrapping, decoding and encoding

## 2.1   *List of Documents Available on Request*

Please contact media@evs.tv for more information.

- • **XMLSchema v1_07.zip** : The EVS XML scheme viewable with FireFox Browser:

    - o Metadata v2.0 : Description of EVS Metadata

    - o Jobs v1.0 : Description of XML jobs

    - o Status v1.0 : Description of transfer status and error codes

- o Encoders v2.0 : Description of the encoder profiles configuration
- o EDL v1.0 : Description of the new EVS EDL (Playlist and Timeline)
- o **EVS_XML_JOBS_1.3.10.pdf** : Description of the XML jobs supported by XTAccess v1.14 (compliant with XML Schema v1.07)
- o **EVS Metadata xml v1.01.14.pdf** : Description of the EVS Metadata supported by XTAccess v1.14 (compliant with XML Schema v1.07)
- o **EVS EDL – Structure and Effects Description v1.0.pdf** : Description of the effects and the EDL structure supported in XTAccess (compliant with XML Schema v1.07)

# 3   EVS COMPLIANCE MATRIX

- **Package Package M10.01**
- **Package Package M10.03**

# 4   SOFTWARE INSTALLATION

See Installation Manual for details of the installation procedure.

Copy the installshield XTAccess_1.14.xx_Setup.exe in a temp directory (e.g. C:\Install Software\XTAccess\).

It is recommended to first uninstall XTAccess versions prior to v1.04.34.

Run XTAccess installshield **XTAccess_1.14.xx_Setup.exe** and then follow the steps of the Setup wizard.

The installer includes a registry key that disables the autorun function on USB keys to avoid virus intrusion

**Reboot needed after first launch**

**Xedio XTAccess Integration :**

Contact Xedio support to install the compliant software.

- o XedioXTAccessIntegration_3.01.19.exe
- o EvsEditFramework_4.04.18.exe

# 5  NEW FEATURES SINCE XTACCESS V1.10.21

## 5.1  Playlist and Timeline Management

### 5.1.1  Principle

XTAccess supports the transfer of playlists (PL) or timelines (TL) as consolidated file or clips, but also as an EDL for backup, transfer to Avid Media Composer or Apple Final Cut Pro.

- Flattening/Consolidation : XTAccess renders the PL/TL with all A/V effects to create a consolidated clip on XT server or a file.
- EDL Export : XTAccess generates an EDL representing the original EVS EDL and backup the elements of the PL/TL if needed.

The new EVS EDL is a proprietary XML structure which is not compatible with the previous EDL (used to flatten PLST in XTAccess v1.10).  This EDL has been designed to cover all PL/TL definition and associated effects supported by Multicam, IPDirector (IPEdit) and Xedio (Clean Edit) applications.  This EDL is embedded into the XML job.

The EDL structure and effects supported are described in the document "EVS EDL – Structure and Effects Description v1.0.pdf"

For the time being, only IP Director is able to generate the XML job to transfer PL/TL following the new EVS EDL.

### 5.1.2  PL/TL Consolidation/Flattening

2 new jobs type have been defined to support flattening of PL/TL :
- #10 : Render Playlist from XT clips or files to single file (flatten)
- #24 : Render Playlist from XT clips or files to one XT clip

**Main Features :**

- Render all EVS effects : Audio & Video effects (clip & transitions)
- Smart rendering : only render needed content
  - Effects on video & audio
  - Items with other codec
  - Smart rendering is not performed when 2 destination targets are associated with the job (limitation of this XTAccess version)
- Need a Encoder Profile in XTAccess XML unit config
  - Define the target codec, resolution (SD/HD) & wrapper
  - Need XSecure code for transcoding…
- Inherit all features from Backup or Restore
  - Referencing into IPD/Xedio/Avid Interplay, etc.
  - Additional codec for proxy generation

- o Files : XTAccess generates companion files like XML metadata + XML EDL
- o Clip XT : XTAccess generates companion files like XML referencing to IPD
- XTGateway
    - o This is a service launched by XTAccess to buffer XT data before rendering
    - o This is an option in XTAccess installation (Auto configuration) : XTGateway is only necessary for PL/TL consolidation when accessing clips on XT server.
    - o We recommend to setup 400 MB of memory cache by transcoding job (Max Transcoding Jobs )
    - o Settings :
        - ▪ 1 XTGateway per XTAccess workstation
        - ▪ 1 XT connection (FTP) per XTGateway (for all XTAccess jobs)

### 5.1.3   PL/TL Export

A new job type have been defined to support flattening of PL/TL :
- ▪ #9 Backup Playlist from XT clips or files to files

## Main Features :

- Types of EDL export :
    - o Archive : XTAccess generates an EVS XML EDL
    - o Avid : XTAccess generates an AAF with effects translation and optionally Interplay check-in via Avid Interplay Web Services.
    - o Apple FCP : XTAccess generates a FCP XML with effects translation
- File Format Backup : like a common backup job
    - o Archive : the File format is defined in the XML job
    - o Avid : always MXF OPAtom and optionally Interplay check-in via Avid Interplay Web Services.
    - o Apple FCP : always Quick Time Movies or Quick Time Reference
    - o The file format can be defined by a Encoder Profile (for transcoding purpose)
- Smart Backup/Rewrap Modes :
    - o Backup Decision : If the target file is already present in the EDL asset -> no backup/rewrap
    - o Always backup all essences of a media
        - ▪ Video & all audio tracks
        - ▪ Even for a TL with only 1 audio track
    - o 2 types of backup : to be defined by the client application (e.g. IP Director)
        - ▪ Short Backup :
            - • XTAccess only backup the portion of the media (XT clip or file) which is defined in the EDL, plus guardbands (default value : 50 frames)
            - • In case several elements are overlapping or a repeated in the same media, XTAccess only backup them once or group them together for efficiency reasons.
        - ▪ Long Backup : XTAccess always backup the complete media
- **PL/TL Archive :**

- o XTAccess backup EDL + media
- o EDL is extracted from the XML job
    - XTAccess updates the XML EDL with file paths & metadata
- o IPD will perform the restore of the EDL (See IPDirector user manual)
    - Internal to IPD
    - Automatic Restore for needed media
- **PL/TL export to Avid**
    - o XTAccess generates an Avid AAF
        - All EVS effects are supported (with limitations – see document "EVS EDL – Structure and Effects Description v1.0.pdf")
    - o XTAccess backup Clip or rewrap files in MXF OPAtom only :
        - Not Transfer Manager API !
        - Codecs supported : IMX, DV50, DNxHD & DVCPRO HD codecs
    - o Standalone Integration (without Avid Interplay)
        - It is not possible to configure this mode via IPD Remote Installer.  It must be configured via XTAccess XML unit settings.
    - o Interplay Integration
        - AAF and MXF OPAtom media are check-in using Avid Interplay WebServices API
- **PL/TL export to Apple FCP**
    - o XTAccess generates a FCP XML
        - All EVS effects are supported (with limitations – see document "EVS EDL – Structure and Effects Description v1.0.pdf")
    - o XTAccess backup Clip or rewrap files in Quick Time Movies/Reference
        - Codecs supported : IMX, DV50, Apple ProRes & DVCPRO HD codecs
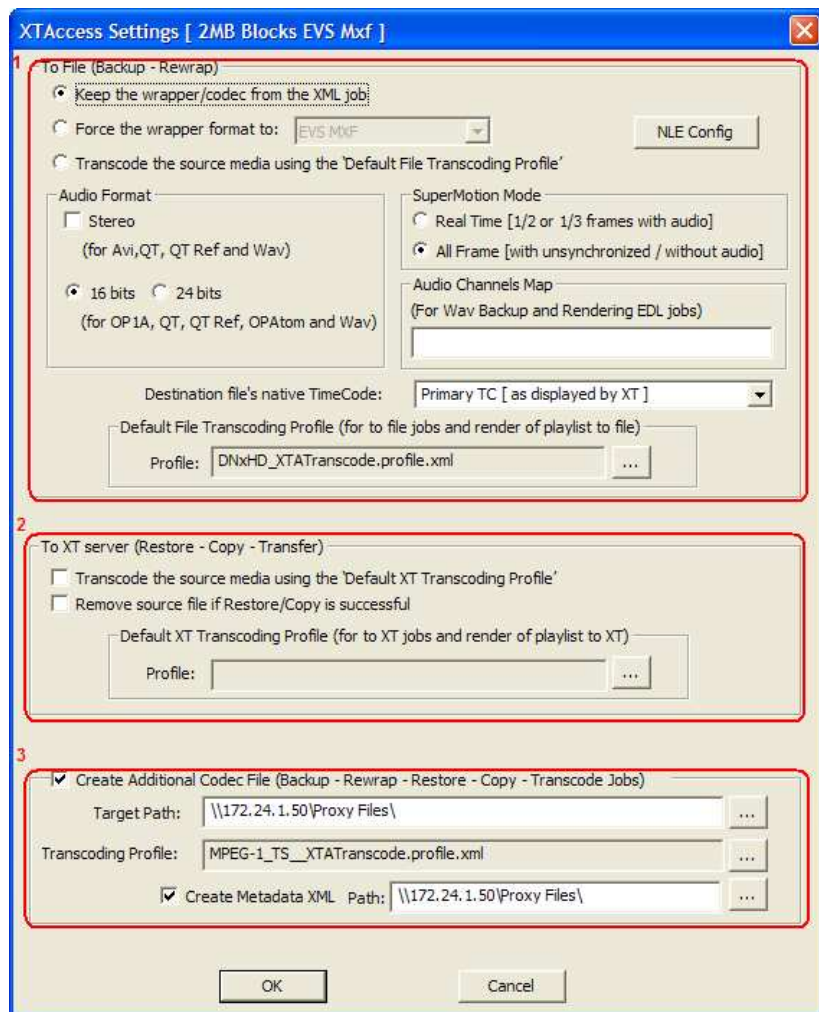
## *5.2  XML Jobs and Transcoding Features*

- Smart Transcoding :
    - o XTAccess automatically analyses the source and destination codec and bitrates and will only perform a rewrapping if they are identical.
    - o Special cases :
        - DNxHD 100 vs DNxHD 120/145 : as XTAccess must be compliant to Avid standards, those codecs are considered as identical with regards to the smart transcoding criteria.
        - MJPEG with different bitrates are also considered as identical with regards to the smart transcoding criteria.
    - o This feature is supported for all XML jobs.
- Multi-Target
    - o A second target for a given job can be defined in the XML unit configuration.
    - o This second job must be a "transcoding job".  Anyway thanks to the smart transcoding feature, XTAccess will only perform a rewrapping if the destination codec is identical to the source codec.
- News jobs or options :
    - o XT to XT copy supports growing clips

- o XT to XT copy can perform a transcoding.  In this case, the "proxy transfer mode" between both XT is not used, data transits via XTAccess device
- o Automatic grabs generation for train confidence: this is an option in the XML jobs for backup of train.  A grab of incoming stream is generated periodically.
- o Backup and Restore of BWAV files (for 16-bit & 48 KHz only).
- o Use <Long_Clip_Name> in the XML referencing file : possibility to support a clip name up to 64 characters.
- o Metadata Matrix for FCP metadata : XTAccess supports the definition of a matrix mapping for EVS metadata to the 6 custom FCP metadata.  This is only available for backup or rewrap of media, not for EDL export to FCP.
- o Refactoring of Xedio referencing for better integration
- o XTAccess supports Keyword with 64 characters as metadata.
- o Automatic creation of a folder if not existing : XTAccess will automatically creates a folder in case this path does not exist.  This is only valid for media files, not for XML metadata or EDL files.
- o Colors for markers (logs) available in FCP v7 are supported by XTAccess.
- o XTAccess supports grab of fields for all non native XT codecs : XDCAM HD, DV25, DVCPRO 25, MPEG-1, MPEG-2, H.264.

## 5.3  XTAccess Configuration GUI

The new configuration interface is split in 3 parts:
- Jobs To File
- Jobs To XT Server
- Create Additional Codec File

Here are the new settings in each part:

**To File**

The 3 main options:
- Keep the Wrapper/codec from the XML job : Use this option if you don't want to change the wrapper of the file which will be created by XTAccess
- Force the Wrapper format to : "xxxxxx": Use this option if you want to change the wrapper of the file which will be created by XTAccess
- Transcode the source media using the 'Default File Transcoding Profile' : Use this option if you want transcode the source clip and so define the codec and the wrapper of the destination in the transcoding profile

### Audio Channels Map

This setting is used to define how the output audio channels will be distributed to the generated audio files (for the rendering jobs and Wav backup):

- Use <;> to separate the content of the various audio files to generate
- Use a space between each audio channel to be included in an audio file
- Use <-1> to mute a channel (not for the Wav backup)

Audio channel are between 0 and 7

Example: 0 1 3 4; 7 2; 4 5 ; 3 6 will create 4 BWAV files

### Destination file's native TimeCode

This setting allows you to define which Timecode will be saved in the video file

- Primary TC : To save the XT Primary TC in the video file
- LTC : To save the LTC in the video file
- User TC: To save the User TC in the video file

### Default File Transcoding Profile:

Default Transcoding profile is used for the **job to file** (if you have selected the $3^{rd}$ option "Transcode the source media using …") or for the **Rendering of playlist to file**

You have here to define a XML profile File that defines the Codec and parameter of the codec used to transcode the file.

### To XT Server

- **Transcode Restored File**: Select this option if you want to do transcoding during the restore or copy EVS server to EVS server.
- **Remove Source file if restore successful**: in case of Restore and Copy, it could be useful to automatically delete the source file to clean the source storage.  The file will be removed only if the job is successful.
- **Default File Transcoding Profile:** Default Transcoding profile is used for the **job to XT** (if you have selected the $3^{rd}$ option "Transcode the source media using …") or for the **Rendering of playlist**.  You have here to define a XML profile File that defines the Codec and parameter of the codec used to transcode the file.

### Create Additional Codec

- **Create Additional codec File**: Select this option if you want to create an additional file. For example a proxy file at the same time that your hires backup. The additional codec file will be done on the fly with the mean job.  The additional codec option can be used with all jobs.

## 5.4  Codecs and Wrappers

### 5.4.1  Apple ProRes 422 LT

- The new Apple ProRes LT has been implemented in Multicam.

- This codec can be backuped and restored in EVS MXF and Quick Time Movies/Reference formats.
- Bit rates : 85 Mbps for 1080i50/720p50 and 100 Mbps for 1080i5994/720p5994

### 5.4.2  Apple ProRes 422 decoder/encoder

- XTAccess decodes and encodes by software the Apple ProRes 422 family
- Codecs supported : Apple ProRes 422 (LT), Apple ProRes 422 and Apple ProRes 422 (HQ)
- Decoding and encoding performances are similar as Avid DNxHD codec at the same bitrate.

### 5.4.3  XDCAM EX

- XTAccess decodes and encodes XDCAM EX format.
- Codecs supported : 17.5, 25 and 35 Mbps

### 5.4.4  Blu-Ray and DVD File Format

- XTAccess can generate a BluRay or DVD format
- Codecs supported :
  - o   SD : DVD MPEG-2 with VOB file format
  - o   HD : Blu-Ray H.264 with M2TS file format
- Configuration via the encoder profile.
- The authoring tool is not generated by XTAccess.  A third party application must perform the authoring.

### 5.4.5  MXF OP1a SMPTE format

- XTAccess generate a MXF OP1a format compliant with SMPTE
- Codecs Supported : DV50, DVCPRO HD, Avid DNxHD 100, Avid DNxHD 120/145 and Avid DNxHD 185/220

### 5.4.6  New Proxy format : H.264

- A new proxy format is officially supported by XTAccess : H.264 TS
- Bitrate or video and audio essences can be setup via the encoder profile.
- File format is TS (Transport Stream) to be open the file during creation (for IP Director, Xedio Clean Edit and Insio players)

### 5.4.7  16 audio channels in decoding/encoding process

- XTAccess is able to decode and encode up to 16 audio channels (EVS MXF, QT, QT Ref, and MP4).

### 5.4.8  10-bit support for video resolution

- ProRes 422 Family :
  - XTAccess supports native 10-bit ProRes 422 content but only for backup/Restore, Rewrap or XT to XT Copy without Transcoding.
  - Transcoding will only generates 8-bit video
  - All files formats supported by Apple ProRes 422
- Avid DNxHD 185x/220x:
  - XTAccess supports native 10-bit for Avid DNxHD 185x and 220x, but only for EVS MXF wrapper.
  - Other file formats, transcoding and Avid TM integration are not supported with this codec in XTAccess

### 5.4.9  Dolby E

- XTAccess maintained Dolby E audio channels in EVS MXF file formats only (backup, Restore and Rewrapping).
- For file formats or transcoding processes, XTAccess still keep the audio channel but the Dolby E is corrupted.

### 5.4.10  Finalization of DVCPRO HD and DVCPRO 50 support

- New file formats supported for DVCPRO HD and DVCPRO 50 codecs :
  - Panasonic P2 XMF OPAtom, DIV.
- XTAccess supports 3D backup of DVCPRO HD content like the other codecs in EVS MXF
- XTAccess can backup DVCPRO HD SuperMotion clips in EVS MXF file format.
- XTAccess supports the "all frame" backup/rewrap with fields re-ordering (via transcoding) for non EVS MXF file formats (MXF OP1a or Quick Time Movies/Reference).

### 5.4.11  TGA Compressed

XTAccess supports the import of graphic files in TGA Compressed format.

### 5.4.12  Quick Time Animated Codec

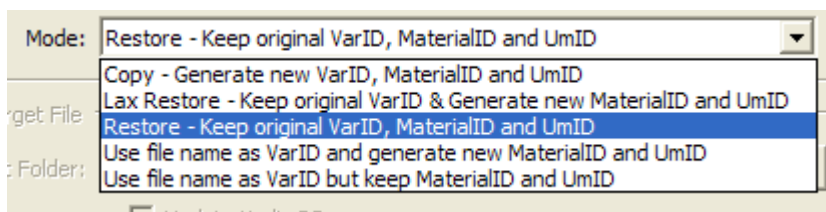XTAccess supports Apple Quick Time Animated codec generated by Adobe After Effects.

### 5.4.13  Avid DNxHD header

XTAccess supports the modifications of DNxHD header tags recommended by Avid to be compliant to VC-3 SMPTE standard.

## 5.5  Scan Folder

- New VarID options : Use FileName as VarID



- Better referencing of Hi & Lo-res referencing with IP Director and Xedio applications.
- If no XML metadata file is associated with the media file to scan, a XML metadata file is generated and correctly referenced in IP Director or Xedio.
- Improvement of scan folder load balancing : the file is first moved to a temporary folder "Scan Process" to avoid any capture by another XTAccess instance. It is possible now to use Scan Folder in load balancing : Multiple XTAccess can scan the same folder
- XTAccess supports the Job_Dest_Clip_location in Scan Folder settings.

## 5.6  AVID Interplay Web Service Integration

XTAccess 1.14 is able to send files as native Avid MXF OPAtom and reference them in the Avid Interplay Database through the Avid Interplay WebService API.

Besides, XTAccess supports Edit while Capture (EWC) with backup/rewrap in MXF OPAtom and Interplay checkin in the same way as with Avid TM.  There are some limitations with this workflow : see below.
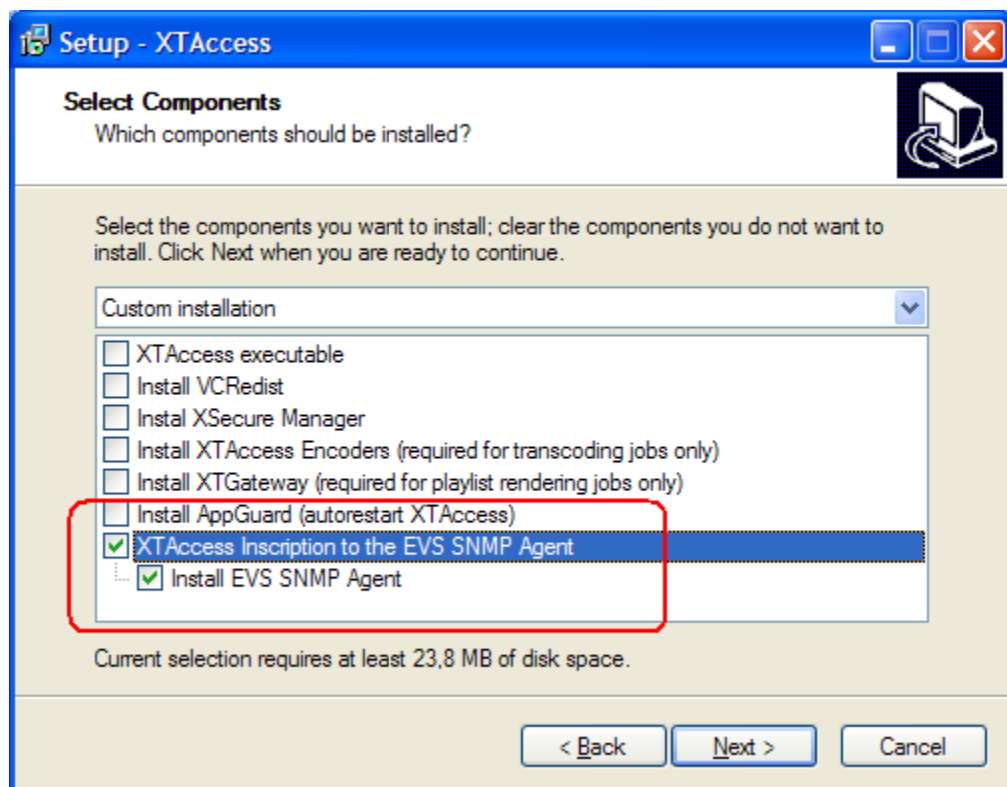
Versions supported :
- Avid Interplay Web Services : v1.1, v1.4 and v2.0.
- Avid Interplay Framework : v1.6, v2.0, v2.1 and v2.2.

More information about this workflow are present in the "Integration_Avid_WebService V3.doc"

## 5.7  Miscellaneous

### 5.7.1  SNMP Monitoring
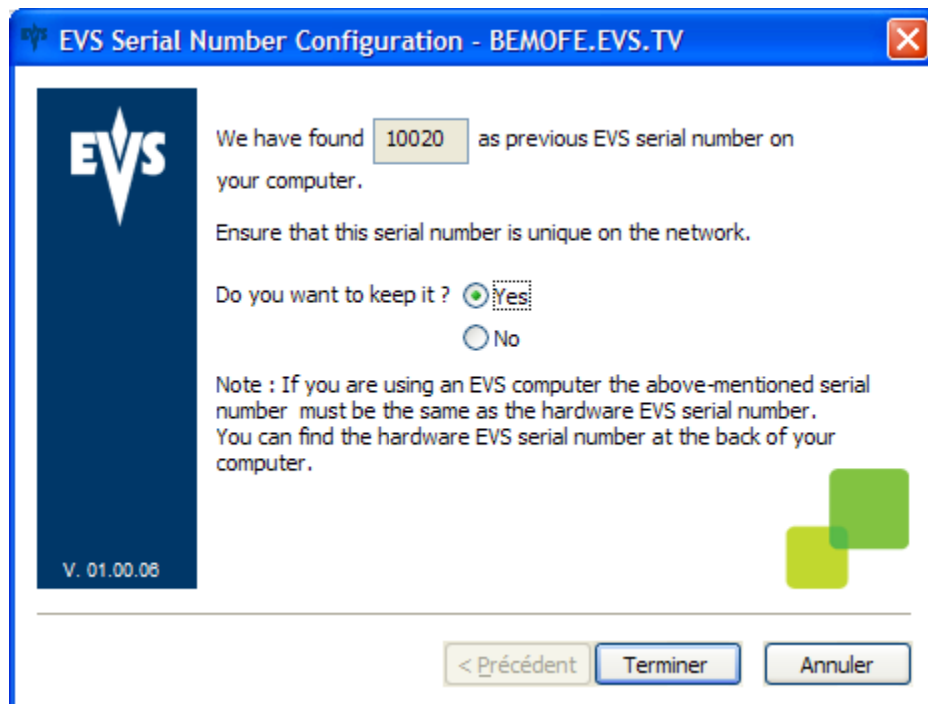
XTAccess integrates SNMP.

You can install the EVS Agent and subscribe to this agent at the installation of XTAccess

Only basic SNMP functions are implemented for XTAccess, such as the status of XTAccess application (running or not) and the XTAccess version.

You can also manage the computer status (CPU, Network, HDD, … )

### 5.7.2  EVS wizard Serial Number

At the upgrade of an existing XTAccess version: there will be an EVS Wizard which will configure the Global EVS Software Serial Number. The wizard will find the current serial number on the computer and then will propose to the user to change it or not.
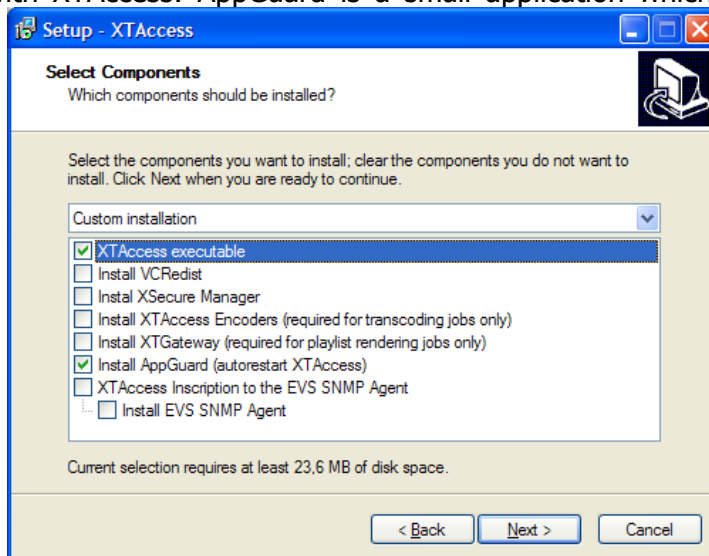
The EVS Serial Number must be unique on the network. On EVS Computer the EVS Serial Number software must be the same as the EVS Serial Number printed at the back of the computer

If there is XFile software already installed on the computer the wizard will keep the XFile serial number without any prompts.

### 5.7.3   AppGuard

You can now install AppGuard with XTAccess: AppGuard is a small application which will
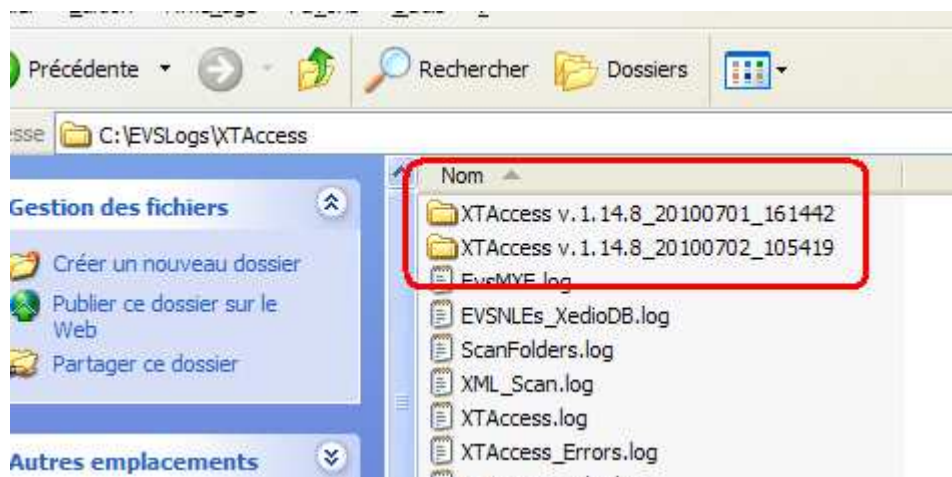


restart XTAccess in case of crash.

### 5.7.4  Logs

For a support purpose, it can be useful to activate the KeepLogs feature. With the version 1.14 of XTAccess: the logs of XTAccess can be saved after each reboot of XTAccess in a sub folder with the date and time of the reboot.

By default, this feature is activated when AppGuard is installed.  Otherwise, this feature is not active.  To activated it, modify the shortcut of XTAccess :
"C:\Program Files\EVS Broadcast Equipment\XTAccess\XTAccess.exe" /KeepLogs
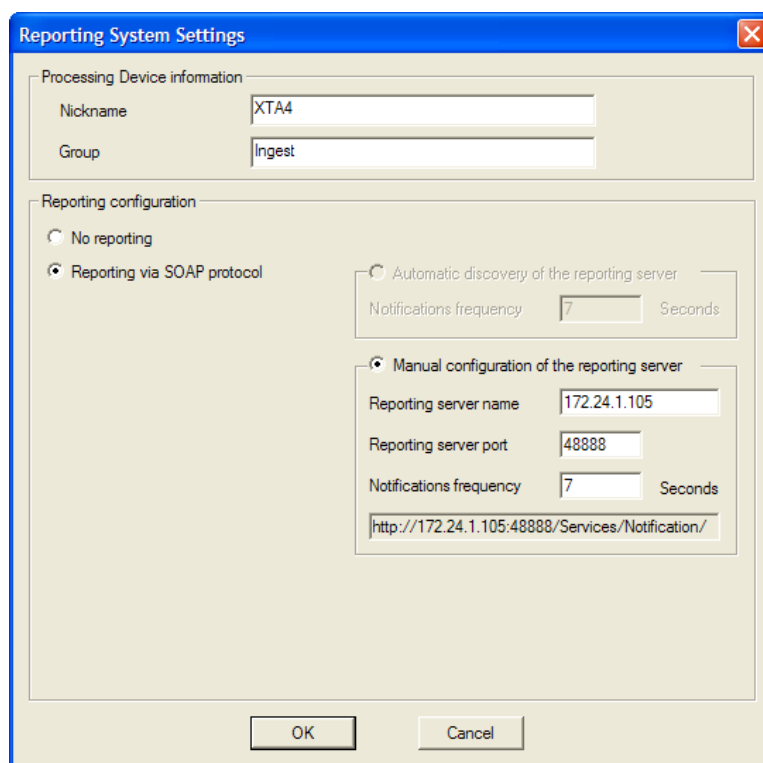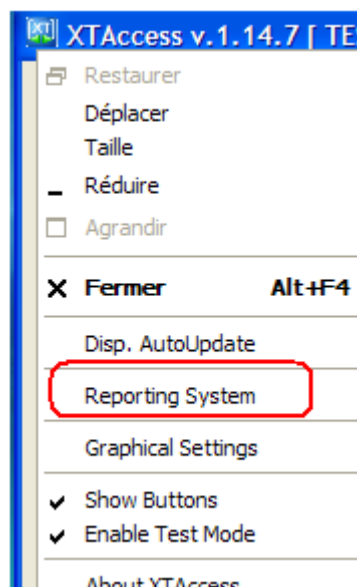


### 5.7.5  Legacy TC

XTAccess does not save and use anymore the Legacy TC of Multicam.  This means that all TC calculations are now based on 64-bit TC (LTC or User TC).  This will prevent from Legacy TC and the 64-bit TC bad synchronization in Multicam server.

By default the primary timecode of the XT is now saved as Timecode in the video file

### 5.7.6   Reporting System

XTAccess integrates a new reporting system for Vedio. This reporting system sent soap requests to the Vedio server with the status of all jobs (job XML and Scan folder)

The XTAccess reporting system configuration windows is located in the right menu of XTAccess

# 6  BUGS CORRECTION SINCE XTACCESS V1.10.21

- **Backup train :**
  - o  XTAccess improved the backup of train close to near the live position
  - o  Update XML job is processed in priority
- **Transcoding :**
  - o  Some jobs of transcoding were stuck in XTAccess
- **Miscellaneous :**
  - o  #3395: Copy XT to XT can not working after a long unused time of the XT[2]
  - o  #3396: The XML Metadata files and XML referencing files can override other existing XML files if you are doing two times the same job with the same clip or file.
  - o  #3294 : Copy XT to XT of growing clips are not supported

# 7  LIMITATIONS

## 7.1.1  UPGRADE

- After upgrade from XTAccess 1.10 to XTAccess 1.14, it is mandatory to verify  your XTAccess configuration. Some settings of XTAccess 1.10 could not be exactly the same in XTAccess 1.14

## 7.1.2  NLE Settings

- General :
  - o  Export PL/TL : EVS recommends to open the FCP EDL (XML) or Avid EDL (AAF) only when all the child backups are done. Otherwise the NLE (Apple FCP or Avid Media Composer) will not update the growing media in their timelines.
  - o  The EVS metadata present in the EDL exported from a PL/TL are the metadata of the original clip and not the metadata of the backuped file which could be different (new VarId, new duration, new In point, etc)
- FCP NLE :
  - o  XTAccess supports only FCP 7 with the version 5 of the FCP XML
  - o  The Matrix of metadata for FCP is only working for the clips metadata, not for the EDL.

- o  It is impossible to increase a backup of train duration in QuickTime reference file

- o  Quick time doesn't support 16 mono audio tracks, it is only possible to create 8 stereo audio tracks

- Avid NLE :

   - o  There could be some troubles with the direct access in MXF OPAtom and Edit While Capture in Avid Media Composer
       - When browsing a growing EWC media, sometimes Media Composer displays "FILE_OTHER" instead of the video. The file must be refreshed by double clicking on the clip in Media Composer bin.
       - Message "PMM_INSUFFICIENT_MEDIA" in Media Composer when a media is updated and stretched : the duration is longer than the original one.  It is not possible to increase the duration of a media sent to Avid.  Note : reducing the duration of the media is OK (see limitation below anyway).
       - When updating the duration of the media in Interplay with a shorter duration, the new short out is correctly updated but we need the delete the clip from the Media Composer bin and re-import the media from Interplay in order to place the short out anchor in the right location in the viewer.   Limitation of Avid Media Composer

### 7.1.3  Transcoding

- XDCAM HD decoder is not working correctly on 16-core processor.   Long files transcoding will fail (typically for more than 30 minutes duration files).   Under investigation.

- If the "Create Additional Codec File" is selected in XTAccess: XTAccess doesn't use anymore the smart rendering. So if you render a playlist and at the same time you want to create a Low Res file (with the "Create Additional Codec File" option): XTAccess will decode all the source video and re-encode all the video for the additional codec but also for the rendering playlist file. This limitation could have impact on the performances.

- It is not possible to keep a file EVS MXF with SuperMotion feature after transcoding.

### 7.1.4  Backup

- Growing clips without out point are not supported by XTAccess.

- The LSI controller on XTAccess 3U computer is not optimised for the creation of Avid MXF OPAtom files.  Under investigation.

- If the backup paths are not exactly the same (for example: C:\Video\Toto.mxf is different than \\Xstore60170\Video\Toto.mxf ) the XTAccess auto incrementation  "(1) (2) (3) etc .." of the filename is not working. We recommend to use %GUID in the file name format string in IPD to be sure that there will never be two times the same file created simultaneously by XTAccess

### 7.1.5  Miscellaneous

- Unicode & ASCII:  Transfer of Unicode metadata to Avid Transfer Manager is not supported.

- In case of backup of trains, <XT_Creation_Time> tags are based on XTAccess workstation date and time, not on XT date and time.

- It is not allowed to open, edit or process a file stored in an XTAccess Scan folder.  XTAccess will not be able to access the file and could generate errors.

- Backup File Name Format String : XTAccess is not able to handle special characters like the "\ / :* ? , ;»<>|" in a string.  Progress current TC in IPD v5 is not available for the Copy XT to XT and with the Avid transfer. The progress bar is available.

- In Hi-Lo mode: you need to use %VCodec or %GUID to do the difference between the two backuped clips and XML

- If the backup / rewrap fails because the target becomes unreachable (i.e. network failure), the incomplete a/v file CANNOT be deleted.

- #2083 : Partial transfer to Avid Transfer Manager of MXF file that have been backuped with XTAccess version prior to 1.06.00 is not feasible.  Complete transfer is OK.

- XML Referencing file are not compatible from Multicam 10 (IPD5) to Multicam 9 (IPD4)

- The XTAccess Scan Folder cannot process growing files. The file must be completed to be processed by the XTAccess Scan Folder

  - #7091: Grab on Growing file OPAtom is not possible